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Droplets sliding on fiber arrays FLORIANE WEYER, University of Liege, ALEXIS DUCHESNE, University of Lille, NICOLAS VANDEWALLE, University of Liege — At a time when water becomes a scarce commodity in the most arid regions, fog harvesting has stood out as a sustainable alternative way to supply drinkable water. The small droplets from the fog impact the mesh net and, as more and more water hits the mesh fibers, the droplets fuse together and slide along the fibers due to gravity. Even though the collection process has been widely studied, the motion of the droplets on the fibers remains an open question. Here, we focus on the motion of droplets on an entanglement of fibers. We use a model system made of silicone oil droplets, to insure total wetting, sliding on nylon fibers. The movement of the droplet depends mostly on the volume of the drop, the fiber inclination and the fiber diameter. The results allow us to better understand the path chosen by the droplets once collected. These results could be used to improve the collection rate of the fog collection devices.

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